CLAIMS

What is claimed is:

1. A thermoformable support film comprised of a material having a tensile strength greater than 0.5 pli at 300°F, wherein the support film is operable to releasably adhere to and support a polymeric substrate during a thermoforming process.

2. The invention according to claim 1, further comprising a second thermoformable film having a tensile strength greater than 0.5 pli at 300°F, wherein the second support film is operable to releasably adhere to and support a polymeric substrate during a thermoforming process

3. The invention according to claim 1, further comprising an adhesive film in abutting relationship with the support film.

4. The invention according to claim 1, further comprising a polymeric substrate in abutting relationship with the support film.

5. The invention according to claim 4, further comprising a release layer in abutting relationship with the support film.

6. The invention according to claim 5, wherein the release layer is operable to releasably adhere to the polymeric substrate.

7. The invention according to claim 6, further comprising a paint or color-containing film system in abutting relationship with the release layer.

8. The invention according to claim 7, further comprising an adhesive film system in abutting relationship with the paint or color-containing film system.

9. The invention according to claim 7, wherein the release layer is operable to releasably adhere to the paint or color-containing film system.

10. The invention according to claim 1, further comprising a paint or color-containing film system in abutting relationship with the support film.

11. The invention according to claim 10, further comprising an adhesive film system in abutting relationship with the paint or color-containing film system.

12. The invention according to claim 10, wherein the support film is operable to releasably adhere to the paint or color-containing film system.

13. The invention according to claim 1, wherein the polymeric substrate is formed into an automotive component.

14. The invention according to claim 1, wherein the polymeric substrate is formed into a component having at least one curved surface.

15. A laminate system, comprising:

a thermoformable support film comprised of a material having a tensile strength greater than 0.5 pli at 300°F; and

a polymeric substrate in abutting relationship with the support film;

wherein the support film is operable to releasably adhere to and support the polymeric substrate during a thermoforming process.

16. The invention according to claim 15, further comprising a second thermoformable film having a tensile strength greater than 0.5 pli at 300°F, wherein the second support film is operable to releasably adhere to and support a polymeric substrate during a thermoforming process

17. The invention according to claim 15, further comprising an adhesive film in abutting relationship with the support film.

18. The invention according to claim 15, further comprising a release layer in abutting relationship with the support film.

19. The invention according to claim 18, wherein the release layer is operable to releasably adhere to the polymeric substrate.

20. The invention according to claim 19, further comprising a paint or color-containing film system in abutting relationship with the release layer.

21. The invention according to claim 20, further comprising an adhesive film system in abutting relationship with the paint or color-containing film system.

22. The invention according to claim 20, wherein the release layer is operable to releasably adhere to the paint or color-containing film system.

23. The invention according to claim 15, further comprising a paint or color-containing film system in abutting relationship with the support film.

24. The invention according to claim 23, further comprising an adhesive film system in abutting relationship with the paint or color-containing film system.

25. The invention according to claim 23, wherein the support film is operable to releasably adhere to the paint or color-containing film system.

26. The invention according to claim 15, wherein the polymeric substrate is formed into an automotive component.

27. The invention according to claim 15, wherein the polymeric substrate is formed into a component having at least one curved surface.

28. A support film system, comprising:

a thermoformable support film comprised of a material having a tensile strength greater than 0.5 pli at 300°F; and

a release layer in abutting relationship with the support film;

wherein the release layer is operable to releasably adhere to a polymeric substrate during a thermoforming process;

wherein the support film is operable to support the polymeric substrate during the thermoforming process.

29. The invention according to claim 28, further comprising a second thermoformable film having a tensile strength greater than 0.5 pli at 300°F, wherein the second support film is operable to releasably adhere to and support a polymeric substrate during a thermoforming process

30. The invention according to claim 28, further comprising an adhesive film in abutting relationship with the support film.

31. The invention according to claim 28, further comprising a polymeric substrate in abutting relationship with the release layer.

32. The invention according to claim 31, further comprising a paint or color-containing film system in abutting relationship with the release layer.

33. The invention according to claim 32, further comprising an adhesive film system in abutting relationship with the paint or color-containing film system.

34. The invention according to claim 32, wherein the release layer is operable to releasably adhere to the paint or color-containing film system.

35. The invention according to claim 28, further comprising a paint or color-containing film system in abutting relationship with the support film.

36. The invention according to claim 35, further comprising an adhesive film system in abutting relationship with the paint or color-containing film system.

37. The invention according to claim 35, wherein the support film is operable to releasably adhere to the paint or color-containing film system.

38. The invention according to claim 28, wherein the polymeric substrate is formed into an automotive component.

39. The invention according to claim 28, wherein the polymeric substrate is formed into a component having at least one curved surface.

40. A thermoformable support film system, comprised of:

a support film comprised of a material having a tensile strength greater than 0.5 pli at 300°F, wherein the support film is operable to releasably adhere to and support a polymeric substrate during a thermoforming process; and

a paint or color-containing film system in abutting relationship with the support film;

wherein the support film is operable to releasably adhere to the paint or color-containing film system.

41. The invention according to claim 40, further comprising a second thermoformable film having a tensile strength greater than 0.5 pli at 300°F, wherein the second support film is operable to releasably adhere to and support a polymeric substrate during a thermoforming process

42. The invention according to claim 40, further comprising an adhesive film in abutting relationship with the support film.

43. The invention according to claim 40, further comprising a polymeric substrate in abutting relationship with the support film.

44. The invention according to claim 43, further comprising a release layer in abutting relationship with the support film.

45. The invention according to claim 44, wherein the release layer is operable to releasably adhere to the polymeric substrate.

46. The invention according to claim 44, wherein the paint or color-containing film system is in abutting relationship with the release layer.

47. The invention according to claim 44, further comprising an adhesive film system in abutting relationship with the paint or color-containing film system.

48. The invention according to claim 44, wherein the release layer is operable to releasably adhere to the paint or color-containing film system.

49. The invention according to claim 40, further comprising an adhesive film system in abutting relationship with the paint or color-containing film system.

50. The invention according to claim 40, wherein the polymeric substrate is formed into an automotive component.

51. The invention according to claim 40, wherein the polymeric substrate is formed into a component having at least one curved surface.

52. A thermoformable support film system comprised of:

a support film comprised of a material having a tensile strength greater than 0.5 pli at 300°F, wherein the support film is operable to releasably adhere to and support a polymeric substrate during a thermoforming process;

a paint or color-containing film system in abutting relationship with the support film;

an adhesive film system in abutting relationship with the paint or color-containing film system; and

wherein the support film is operable to releasably adhere to the paint or color-containing film system.

53. The invention according to claim 52, further comprising a polymeric substrate in abutting relationship with the support film.

54. The invention according to claim 53, further comprising a release layer in abutting relationship with the support film.

55. The invention according to claim 54, wherein the release layer is operable to releasably adhere to the polymeric substrate.

56. The invention according to claim 54, wherein the paint or color-containing film system is in abutting relationship with the release layer.

57. The invention according to claim 54, wherein the release layer is operable to releasably adhere to the paint or color-containing film system.

58. The invention according to claim 52, further comprising an adhesive film system in abutting relationship with the paint or color-containing film system.

59. The invention according to claim 52, wherein the polymeric substrate is formed into an automotive component.

60. The invention according to claim 52, wherein the polymeric substrate is formed into a component having at least one curved surface.

61. A method for forming a support film system, comprising:

providing a thermoformable support film comprised of a material having a tensile strength greater than 0.5 pli at 300°F;

providing a release layer in abutting relationship with the support film;

wherein the release layer is operable to releasably adhere to a polymeric substrate during a thermoforming process; and

wherein the support film is operable to support the polymeric substrate during the thermoforming process.

62. The invention according to claim 61, further comprising providing a second thermoformable film having a tensile strength greater than 0.5 pli at 300°F, wherein the second support film is operable to releasably adhere to and support a polymeric substrate during a thermoforming process

63. The invention according to claim 61, further comprising providing an adhesive film in abutting relationship with the support film.

64. The invention according to claim 61, further comprising providing a polymeric substrate in abutting relationship with either the support film or the release layer.

65. The invention according to claim 61, further comprising providing a paint or color-containing film system in abutting relationship with either the support film or the release layer.

66. The invention according to claim 65, further comprising providing an adhesive film system in abutting relationship with the paint or color-containing film system.

67. The invention according to claim 65, wherein the release layer is operable to releasably adhere to the paint or color-containing film system.

68. The invention according to claim 65, wherein the support film is operable to releasably adhere to the paint or color-containing film system.

69. The invention according to claim 61, further comprising a paint or color-containing film system in abutting relationship with the support film.

70. The invention according to claim 69, further comprising an adhesive film system in abutting relationship with the paint or color-containing film system.

71. The invention according to claim 69, wherein the support film is operable to releasably adhere to the paint or color-containing film system.

72. The invention according to claim 61, wherein the polymeric substrate is formed into an automotive component.

73. The invention according to claim 61, wherein the polymeric substrate is formed into a component having at least one curved surface.

74. A method for forming a laminate system, comprising:

providing a thermoformable support film comprised of a material having a tensile strength greater than 0.5 pli at 300°F;

providing a polymeric substrate in abutting relationship with the support film; and

wherein the support film is operable to releasably adhere to and support the polymeric substrate during a thermoforming process.

75. The invention according to claim 74, further comprising providing a second thermoformable film having a tensile strength greater than 0.5 pli at 300°F, wherein the second support film is operable to releasably adhere to and support a polymeric substrate during a thermoforming process

76. The invention according to claim 74, further comprising providing an adhesive film in abutting relationship with the support film.

77. The invention according to claim 74, further comprising a release layer in abutting relationship with either the support film or the polymeric substrate.

78. The invention according to claim 77, wherein the release layer is operable to releasably adhere to the polymeric substrate.

79. The invention according to claim 77, further comprising a paint or color-containing film system in abutting relationship with either the release layer or the polymeric substrate.

80. The invention according to claim 79, further comprising an adhesive film system in abutting relationship with the paint or color-containing film system.

81. The invention according to claim 79, wherein the release layer is operable to releasably adhere to the paint or color-containing film system.

82. The invention according to claim 74, further comprising a paint or color-containing film system in abutting relationship with the support film.

83. The invention according to claim 82, further comprising an adhesive film system in abutting relationship with the paint or color-containing film system.

84. The invention according to claim 82, wherein the support film is operable to releasably adhere to the paint or color-containing film system.

85. The invention according to claim 74, wherein the polymeric substrate is formed into an automotive component.

86. The invention according to claim 74, wherein the polymeric substrate is formed into a component having at least one curved surface.

87. A method for forming a laminate system, comprising:

providing a thermoformable support film comprised of a material having a tensile strength greater than 0.5 pli at 300°F;

providing a release layer in abutting relationship with the support film;

providing a surfacing film system in abutting relationship with the release layer;

providing a polymeric substrate in abutting relationship with the surfacing film system;

wherein the release layer is operable to releasably adhere to the surfacing film system during the thermoforming process; and

wherein the support film is operable to support the polymeric substrate during the thermoforming process.

88. The invention according to claim 87, further comprising providing a second thermoformable film having a tensile strength greater than 0.5 pli at 300°F, wherein the second support film is operable to releasably adhere to and support a polymeric substrate during a thermoforming process

89. The invention according to claim 87, further comprising providing an adhesive film in abutting relationship with the support film.

90. The invention according to claim 87, further comprising providing an adhesive film system in abutting relationship with the surfacing film system.

91. The invention according to claim 87, wherein the surfacing film system comprises a paint or color-containing film system.

92. The invention according to claim 87, wherein the polymeric substrate is formed into an automotive component.

93. The invention according to claim 87, wherein the polymeric substrate is formed into a component having at least one curved surface.

94. A method for forming a support film system, comprising:

providing a thermoformable support film comprised of a material having a tensile strength greater than 0.5 pli at 300°F;

providing a paint or color-containing film system in abutting relationship with the support film; and

wherein the support film is operable to releasably adhere to and support the paint or color-containing film system during a thermoforming process.

95. The invention according to claim 94, further comprising providing a second thermoformable film having a tensile strength greater than 0.5 pli at 300°F, wherein the second support film is operable to releasably adhere to and support a polymeric substrate during a thermoforming process.

96. The invention according to claim 94, further comprising providing an adhesive film in abutting relationship with the support film.

97. The invention according to claim 94, further comprising providing a polymeric substrate in abutting relationship with the support film.

98. The invention according to claim 97, wherein the polymeric substrate is formed into an automotive component.

99. The invention according to claim 97, wherein the polymeric substrate is formed into a component having at least one curved surface.

100. The invention according to claim 97, further comprising providing a release layer in abutting relationship with either the paint or color-containing film system or the polymeric substrate.

101. The invention according to claim 100, wherein the release layer is operable to releasably adhere to either the paint or color-containing film system or the polymeric substrate.

102. The invention according to claim 94, wherein the paint or color-containing film system is in abutting relationship with the polymeric substrate.

103. The invention according to claim 94, further comprising providing an adhesive film system in abutting relationship with the paint or color-containing film system.

104. A method for forming a support film system, comprising:

providing a thermoformable support film comprised of a material having a tensile strength greater than 0.5 pli at 300°F;

providing a paint or color-containing film system in abutting relationship with the support film;

providing an adhesive film system in abutting relationship with the paint or color-containing film system; and

wherein the support film is operable to releasably adhere to and support the paint or color-containing film system during a thermoforming process.

105. The invention according to claim 104, further comprising providing a polymeric substrate in abutting relationship with the support film.

106. The invention according to claim 105, wherein the polymeric substrate is formed into an automotive component.

107. The invention according to claim 105, wherein the polymeric substrate is formed into a component having at least one curved surface.

108. The invention according to claim 105, further comprising providing a release layer in abutting relationship with either the paint or color-containing film system or the polymeric substrate.

109. The invention according to claim 108, wherein the release layer is operable to releasably adhere to the paint or color-containing film system.